CLAIMS

1. A method of manufacturing ceramic electronic components comprising:
a first step of making a reduction of porosity in a ceramic sheet containing a ceramic powder and an organic material by applying a pressing force thereto;
a second step of forming a conductive layer on said sheet by using a metallic paste;
a third step of producing a laminate by stacking a plurality of said sheets, each having said conductive layer formed thereon, in such a way as having said conductive layers located opposite to each other and sandwiching said conductive layer between two adjoining ceramic sheets; and
a fourth step of firing said laminate.
2. The method of manufacturing ceramic electronic components according to Claim 1, wherein a ceramic sheet presents 50 % or more in porosity before said first step.
3. The method of manufacturing ceramic electronic components according to Claim 1, wherein said ceramic sheet contains at least a ceramic constituent and polyethylene in said first step.
4. The method of manufacturing ceramic electronic components according to Claim 1, wherein said ceramic sheet presents less than 50 % in porosity after said first step.
5. The method of manufacturing ceramic electronic components according to Claim 1, wherein said pressing force applied in said first step is smaller than a pressing force applied in producing said laminate in said third step.
6. The method of manufacturing ceramic electronic components according to Claim 1, wherein heat is applied together with said pressing force.
7. The method of manufacturing ceramic electronic components according to Claim 6, wherein the heat treatment is carried out at temperature ranges from a glass-transition temperature of at least one organic material contained in said ceramic sheet to a melting point thereof.
8. A method of manufacturing ceramic electronic components comprising:

a first step of making a reduction of porosity in a ceramic sheet containing a ceramic powder and an organic material by applying a pressing force thereto;

a second step of forming in advance a conductive layer on a base film by using a metallic paste and superimposing said conductive layer on said ceramic sheet;

a third step of producing a laminate by stacking a plurality of said ceramic sheets, each having said conductive layer superimposed thereon, in such a way as having said conductive layers located opposite to each other and sandwiching said conductive layer between two adjoining ceramic sheets; and

a fourth step of firing said laminate.

9. The method of manufacturing ceramic electronic components according to Claim 8, wherein a ceramic sheet presents 50 % or more in porosity before said first step.

10. The method of manufacturing ceramic electronic components according to Claim 8, wherein said ceramic sheet contains at least a ceramic constituent and polyethylene in said first step.

11. The method of manufacturing ceramic electronic components according to Claim 8, wherein said ceramic sheet presents less than 50 % in porosity after said first step.

12. The method of manufacturing ceramic electronic components according to Claim 8, wherein said pressing force applied in said first step is smaller than a pressing force applied in producing said laminate in said third step.

13. The method of manufacturing ceramic electronic components according to Claim 8, wherein heat is applied together with said pressing force.

14. The method of manufacturing ceramic electronic components according to Claim 13, wherein the heat treatment is carried out at temperature ranges from a glass-transition temperature of at least one organic material contained in said ceramic sheet to a melting point thereof.

15. The method of manufacturing ceramic electronic components according to Claim 8, wherein an organic constituent contained in a conductive layer before being superimposed in said third step ranges from 5 wt % to 15 wt %

against 100 wt % of a metallic constituent.

16. The method of manufacturing ceramic electronic components according to Claim 8, wherein a step of applying a pressing force to said conductive layer in a thickness direction thereof is provided between said second step and said third step.

17. A method of manufacturing ceramic electronic components comprising:

a first step of producing a laminate by stacking ceramic sheets, each containing an organic material and a ceramic powder, and conductive layers one over another alternately; and a second step of firing said laminate, wherein said ceramic sheet has said organic material arranged horizontally in a mesh-like structure, and said organic material and ceramic powder arranged horizontally in a mesh-like structure and at random in the thickness direction.

18. The method of manufacturing ceramic electronic components according to Claim 17, wherein said ceramic sheet presents less than 50 % in porosity.

19. The method of manufacturing ceramic electronic components according to Claim 17, wherein said first step consists of a repeating process comprising the steps of superimposing a conductive layer formed on a base film on said ceramic sheet and peeling off said base film; and superimposing said another ceramic sheet on said conductive layer.

20. The method of manufacturing ceramic electronic components according to Claim 19, wherein there is provided an additional step of applying a pressing force to said conductive layer before being superimposed on said ceramic sheet.

21. The method of manufacturing ceramic electronic components according to Claim 17, wherein said conductive layer is formed by using a thin film process.

22. A ceramic electronic component produced by stacking ceramic layers formed of ceramic sheets, each having an organic material arranged horizontally in a mesh-like structure, and said organic material and ceramic powder arranged at random in the thickness direction, and conductive layers one over another alternately.

23. The ceramic electronic component according to Claim 22, wherein said organic material is polyolefin.

24. The ceramic electronic component according to Claim 23, wherein said polyolefin is polyethylene.